

The Hummel patent describes storing an "authenticity tag" (see column 11, lines 13-39) generated by a policy server in a user's web browser log-in cache, so that it can be later sent to a second web server, which then replays the authenticity tag back to the policy server to authenticate the user. The authenticity tag is used for authenticating a user to the policy server, and not for scheduling requests from the user.

The Cherkasova patent discloses using a server to store and prioritize requests, but does not disclose generating tags which can be sent in a transaction response from a server to an external client requester. That is, prioritization of requests within a web server of the Cherkasova system is not exposed to an external client. Thus, the Hummel and Cherkasova patents do not teach or suggest the presently claimed invention as recited in independent claims 1, 9 and 14.

Neither of the Hummel or Cherkasova patents, considered individually or in combination, teach or suggest Applicants' claim 1 server system that schedules requests from external clients based on a classification tag, and a tag generator that generates the classification tag for a particular transaction in a session based on the analysis of its associated transaction response by a business rule engine. In addition, the patents relied upon by the Examiner fail to teach or suggest that the claim 1 classification tag generated by the tag generator is attached to its respective transaction response before it is returned to the requesting external client to be subsequently attached by that client to any succeeding requests in that session.

Exemplary embodiments of the present invention actually generate tags that are used for scheduling, and send those tags to an external client for inclusion in succeeding requests. A rule engine is used to analyze responses to transaction

requests. A tag generator is used for generating a classification tag for a particular transaction in a session, based on analysis of an associated transaction response by the business rule engine. The classification tag is attached to the transaction response before it is returned to the requesting external client, to be subsequently attached by that client to any succeeding request in that session. Requests to be serviced by the server system are scheduled, at least in part, based on classification information contained in the tag of each subsequent external request.

Thus, exemplary embodiments generate a classification tag for a session based on analysis of a transaction response by a business rule engine, and attach the classification tag to a transaction response returned to the requesting external client so that it can be attached by the client to succeeding requests in that session..

Figure 2 shows an exemplary embodiment of the present invention whereby a data service system 30 includes a front-end server system 31, an application system 35 and a database 39. Server system 31 includes a request processor 32 that schedules external requests to be serviced by a server module 33 based on classification information contained in a tag. The tag contained in each request is generated from the application system 35. The application system 35 includes an application engine 38 that performs a predetermined transaction or operation requested by the request. The application engine 38 also prepares a response to the request about the transaction.

The application system 35 includes a business rule engine 37 that stores business rules regarding classification of various transactions. The business rules can, for example, associate priority with a specific session or user. A tag generator 36 generates a tag that contains classification information of the transaction. This

tag can be attached to the response to be sent to a corresponding requesting client. The client can then attach the tag to subsequent requests to the data service system 30 for the same transaction.

As described in the last paragraph on specification page 12, when an access request is received in the server system 31, request processor 32 first processes the request before it is serviced by server module 33. Request processor 32 classifies the access or user requests as to their processing priority, and schedules the requests to be serviced by the server module 33 according to the priority classification. In an exemplary embodiment, request processor 32 performs the priority classification using classification information contained in a tag attached to the response.

A manner by which a tag can be generated is discussed on specification page 15, in the first full paragraph. As described therein, a tag is generated in application system 35 when it processes the first request for a session/transaction. The application system 35 is considered to be in the best position to indicate which of the user requests should be assigned a high priority because application system 35 handles the actual transaction requested. As described at specification page 15, lines 19-21, the request classification function is thus performed by the application system 35, and not the request processor 32. Additional details are discussed in the paragraph bridging specification pages 15-16.

The foregoing features are broadly encompassed by Applicants' independent claims 1, 9 and 14. For example, claim 1 is directed to a data service system which comprises, among other features, a server system that includes a request processor that schedules requests from external clients for transactions to be serviced by the

server system. An application system coupled to the server system includes an application engine, a business rule engine, and a tag generator. The tag generator of the application system generates a classification tag for a particular transaction in a session based on the analysis of its associated transaction response by the business rule engine. The classification tag generated by the tag generator is attached to its respective transaction response before it is returned to the requesting external client to be subsequently attached by that client to any succeeding requests in that session.

The foregoing features are neither taught nor suggested by the Hummel and Cherkasova patents. In rejecting independent claims 1, 9 and 14, the Examiner asserts on pages 2-3 of the Office Action that:

[Hummel] does not specifically teach that determination of the possibility to access the protected software applications includes classifying the requests to access; and that the determining the possibility to access includes scheduling requests based on said classification information.

...

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify [Hummel] to include that scheduling serving of the external requests is based on the classification information specifying a class for the request, as disclosed in Cherkasova, because it would advantageously allow to determine a priority value for the received request, and to effectively use the system resources, as specifically taught by Cherkasova (column 1, lines 45-69).

On pages 4-5 of the Office Action, the Examiner sets forth a "Response to Arguments", wherein the Examiner asserts:

... it is noted that Hummel teaches generating an authenticity tag indicating the level of security clearance based on the results of determination of the accessibility to the resources made by business rules engine (C. 11 L. 9-17; C. 8, L. 35-51); and sending the authenticity tag to a requesting client that issued the request so that the authenticity tag is attached to subsequent external requests to the data service system, thereby enabling the

determination of the accessibility to the resources by the business rules engine during said subsequent external requests based on the information contained in said attached authenticity tag (C. 11, L. 28-39).

Cherkasova was applied to show scheduling serving of the external requests based on the classification information specifying a class for the request, wherein said classification information is included into the external request (column 2, lines 16-23, 63-65).

[Hummel] would benefit from scheduling serving of the external requests based on the classification information specifying a class for the request, disclosed by Cherkasova, by allowing to determinate priority value for the received request, thereby providing the effective use of the system resources.

The foregoing assertions of the Examiner illustrates the failure of the Hummel and Cherkasova patents to teach or suggest, among other features, generating a classification tag which can be attached to a transaction response before it is returned to a requesting external client, to be subsequently attached by that client to any succeeding requests in a session for purposes of scheduling requests from external clients, as recited in claim 1.

The Hummel patent is directed to a method and system for delivery of protected software applications to remote systems from a central service facility. This patent is directed to providing security when accessing applications. It is not concerned with using a classification tag attached to a transaction response to schedule requests from external clients.

For example, Figure 4 of the Hummel patent illustrates a system having distributed web servers 110 which communicate with a policy server 114 across a firewall 138. Each server 110 is programmed to provide access to one or more software applications which reside in the web server itself or in respective application servers, as described at column 7, lines 59-67. Column 8, lines 35 et seq. describe

a community management database 116 which includes business rules described as "community definitions". The term "community" is described in this patent as referring to a group of remote system users having a particular set of access rights. The business rules provide the criteria for determining software applications for which a member of a particular community has access rights, as described at column 8, lines 48-51. As described at column 8, lines 62 et seq., web servers 110 provide selective access to software applications having a high-level of protection. However, this patent does not describe a tag generator as recited in Applicants' claimed combination.

The Cherkasova patent fails to overcome the deficiencies of the Hummel patent. The Cherkasova patent does not attach any classification tag to a transaction response and does not schedule requests from external clients using a classification tag.

Rather, this patent is directed to scheduling of server requests stored in a queue, where the server determines a priority value for the request (see abstract). Column 2, lines 16-23 describe an embodiment of the Cherkasova patent wherein a request includes information specifying a class for the request. The server determines a maximum priority value for the class, and compares the determined priority value for a received request with the maximum priority value. The server will change the determined priority value of a request to a value greater than the maximum value to assure that all requests received in the queue are processed in the order received. There is no teaching or suggestion for generating a classification tag for a particular transaction in a session based on analysis of an associated transaction response by a business rule engine. Moreover, there is no teaching or

suggestion for attaching such a classification tag to a transaction response for use by a requesting external client in succeeding requests in that session.

Thus, despite the Examiner's comments in the Office Action, the Hummel and Cherkasova patents, considered individually, or in combination, fail to teach or recite features recited in Applicants' claim 1 combination. Combination of these patents at best, would have resulted in using the scheduling methodology of the Cherkasova patent, (whereby a server, and not an application system, prioritizes requests stored in a queue) with the Hummel system. As such, claim 1 is allowable over these patents.

Independent claims 9 and 14 are also allowable over the patents relied upon by the Examiner, as these claims recite features similar to those discussed with respect to claim 1. For example, claim 9 is directed to a method for classifying access requests in a data service system, the method comprising, among other features, using business rules to analyze a response to a request to obtain classification information of the transaction response. Claim 9 recites generating a tag containing the classification information, and sending the tag to a requesting client that issued the request such that the tag is attached to subsequent external requests for the same transaction.

Claim 14 is directed to a data service system which comprises, among other features, a server system configured for receiving and handling requests from clients, and an application system. The application system includes an application engine, a business rule engine and a tag generator. The business rule engine is recited as analyzing responses based on business rules. The tag generator is configured for generating, and regenerating, transaction classifications that

correspondingly attach to the responses before they are returned to the clients, each transaction classification being associated with a particular session and being used with any subsequent requests within that session.

The Hummel and Cherkasova patents simply do not teach or suggest of features recited in claims 9 and 14. Independent claims 9 and 14, like claim 1, are allowable.

All remaining claims depend from the aforementioned independent claims and recite additional advantageous features which further distinguish over the documents relied upon by the Examiner.

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and a Notice of Allowance is requested.

Respectfully submitted,

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